

Remarks

Claims 33 and 38 are canceled herein, without prejudice to renewal, in response to the restriction requirement.

New claims 39-40 are added herein. Support for new claims 39-40 can be found in the specification on page 10, lines 6-13 and lines 31-35. No new matter is added.

Following entry of this amendment, claims 14-32, 34-37 and 39-40 are pending.

Restriction Requirement

In response to the restriction requirement, Applicants elect Group I (claims 14-18, 20, 22, 24-28, 31, and 34-37), with traverse. Applicants submit that it would not be an undue burden on the Examiner to search the subject matter of Groups I, II, and III together. All of these groups are drawn to virus-like particles and fusion proteins.

Group I is drawn to a virus-like particle and a fusion protein that can make the virus-like particle wherein the fusion protein comprises a polypeptide sequence of a major coat protein of a human papilloma virus and an additional peptide sequence other than the major coat protein, that is the protein of a pathogen. Applicants note that HPV is a pathogen as it causes cervical cancer in humans. Thus, proteins from HPV that are not the major coat proteins (such as E1, E2, E6 and E7) are included in this group.

Group II is drawn to a virus-like particle and a fusion protein that can make the virus-like particle wherein the fusion protein comprises a polypeptide sequence of a major coat protein of a human papilloma virus and an addition peptide sequence other than the major coat protein, that is a binding domain for affinity purification. Applicants note that proteins from HPV can be used for affinity purification. For example, both E5 (Yang et al. Protein Expr Purif. 2003 Jul;30(1):1-

10) and E2 (Maitland et al., J Pathol. 1998 Nov;186(3):275-80), can be used in affinity purification schemes. For the Examiner's convenience these abstracts are attached as Exhibit A.

Group III is drawn to a virus-like particle and a fusion protein that can make the virus-like particle wherein the fusion protein comprises a polypeptide sequence of a major coat protein of a human papilloma virus and an additional peptide sequence other than the major coat protein, that is a HPV E protein, that is a binding domain for affinity purification. Applicants submit that Group III is clearly a species of the genus encompassed by Group II, as evidenced by Exhibit A.

Given that the subject matter of Groups I-III is clearly overlapping, Applicants submit that it would not be an undue burden on the Examiner to examine the claims of Groups I-III together.

Moreover, Applicants note that claim 14 is directed to a composition including a virus-like particle including a fusion protein comprising a polypeptide sequence of a major coat protein of a human papilloma virus and an additional peptide sequence other than the major coat protein. This claim is generic to the species of additional peptides that are pathogens or can be used for affinity purification. As such, Applicants submit that claim 14 is generic to virus-like particles and fusion proteins that can make the virus like particle wherein the fusion protein comprises a polypeptide sequence of a major coat protein of a human papilloma virus and an additional peptide sequence other than the major coat protein that is either (1) a pathogen, (2) can be used for affinity purification, or (3) is an HPV E protein that can be used for affinity purification.

Reconsideration and withdrawal of the restriction requirement are respectfully requested.

The Office action further requests election of one of the species of (1) a full length L1 sequence, (2) HPV L1 protein with an N-terminal deletion, and (3) HPV L1 protein with an

amino acid substitution. In response, Applicants elect Group 2, drawn to HPV L1 proteins with an N-terminal deletion, with traverse. Applicants note that all of these species can be searched together.

Applicants thank the Examiner for noting that if a generic claim is found to be allowable and an election of a single species has been made, the Applicants are entitled to consideration of the claims to additional species which are written in dependent form or otherwise include all of the limitations of the generic claim (see MPEP 809.02 (a)).

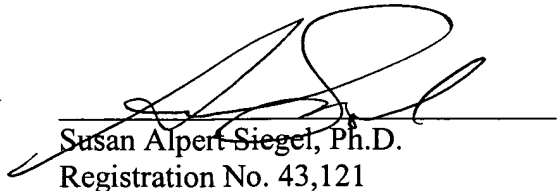
Conclusion

If any minor matters remain to be addressed prior to examination, the Examiner is respectfully requested to contact the undersigned.

Respectfully submitted,

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